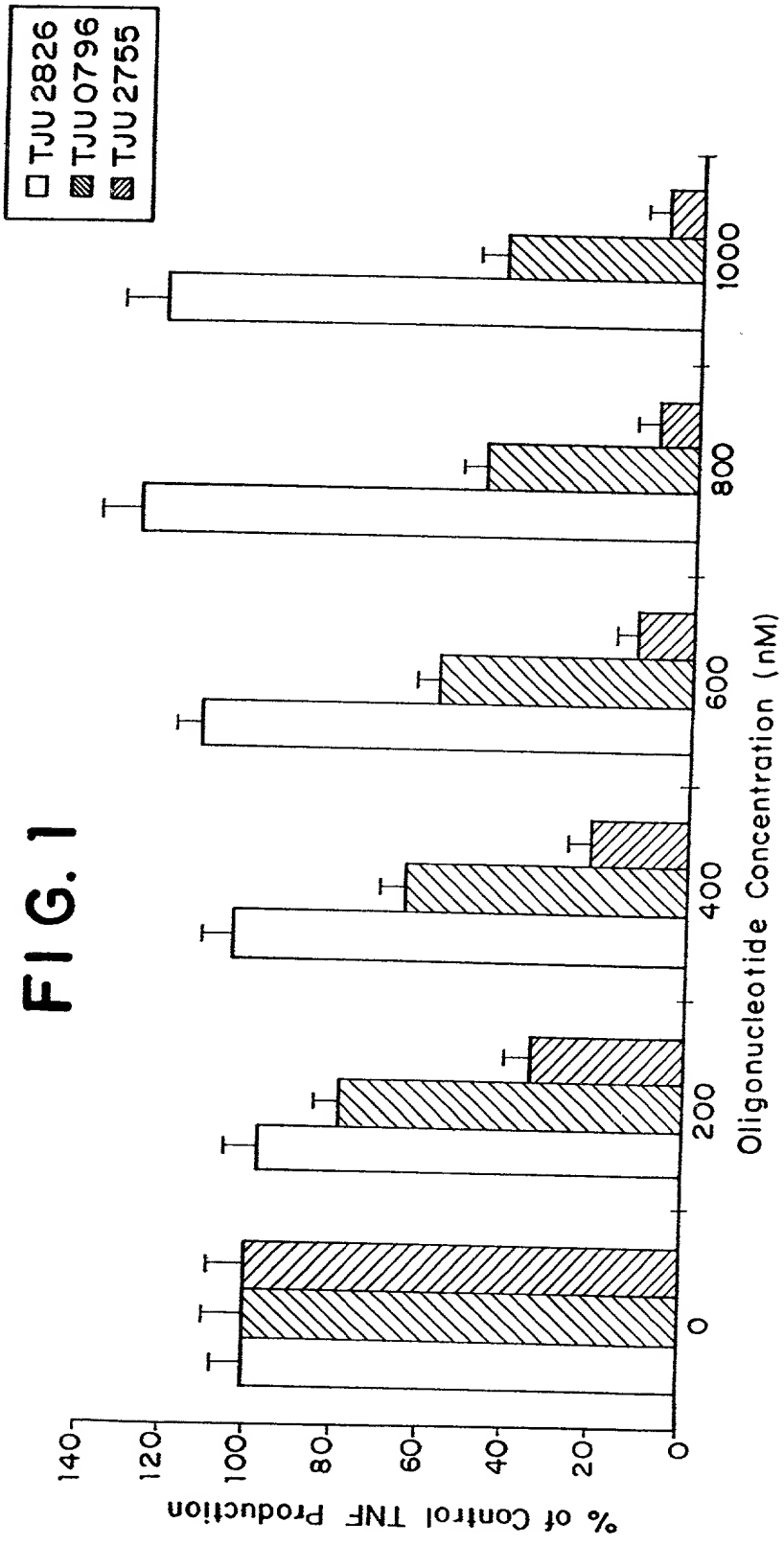

TJU 2826
TJU 0796
TJU 2755
% of Control TNF Production
0
20
40
60
80
100
120
140
0
200
400
600
800
1000
Oligonucleotide Concentration (nM)

FIG. 1

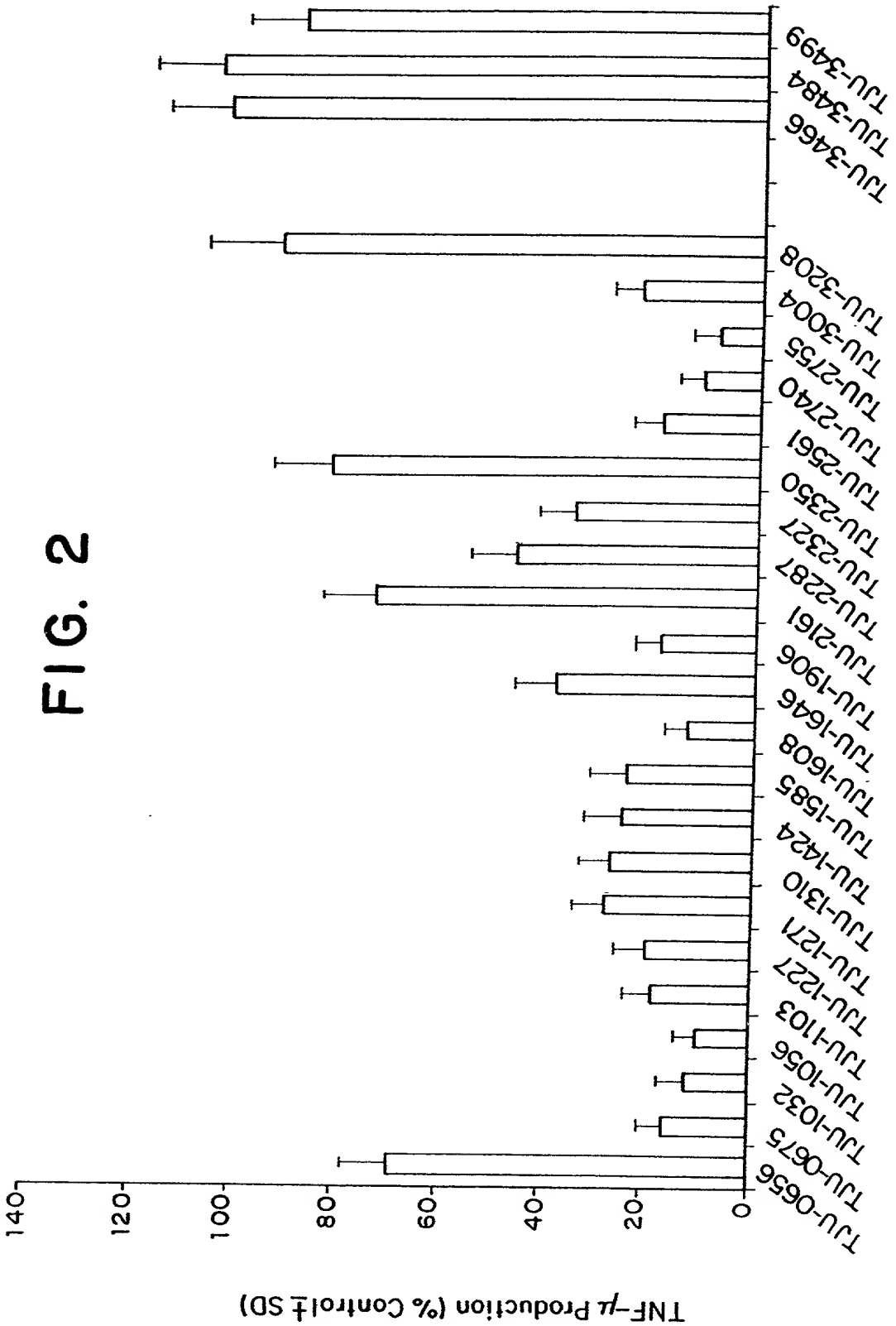

TNF-μ Production (% Control ± SD)
0
20
40
60
80
100
120
140
TJU-0656
TJU-0675
TJU-1032
TJU-1056
TJU-1103
TJU-1227
TJU-1271
TJU-1310
TJU-1424
TJU-1585
TJU-1608
TJU-1646
TJU-1906
TJU-2161
TJU-2287
TJU-2327
TJU-2350
TJU-2561
TJU-2740
TJU-2755
TJU-3004
TJU-3208
TJU-3466
TJU-3484
TJU-3499

FIG. 2

	1	2	3	4	5	6	7	8	9
Name of ASO	–	–	0796	2755	1906	2350	3004	3208	3466
Motif containing	–	–	NO	YES	YES	YES	YES	YES	YES
LPS stimulation	NO	YES	YES	YES	YES	YES	YES	YES	YES
TNF–α inhibition	–	–	48%	92%	80%	18%	77%	8%	NO

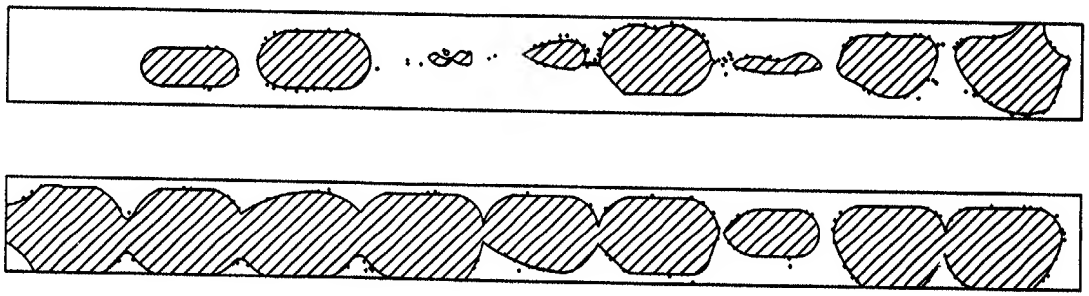


Fig. 3

```
   1 gaattccggg tgatttcact cccggctgtc caggcttgtc ctgctacccc acccagcctt
  61 tcctgaggcc tcaagcctgc caccaagccc ccagctcctt ctccccgcag gacccaaaca
 121 caggcctcag gactcaacac agcttttccc tccaacccgt tttctctccc tcaacggact
 181 cagctttctg aagcccctcc cagttctagt tctatctttt tcctgcatcc tgtctggaag
 241 ttagaaggaa acagaccaca gacctggtcc ccaaaagaaa tggaggcaat aggttttgag
 301 gggcatgGGG Acggggttca gcctccaggg tcctacacac aaatcagtca gtggcccaga
 361 agacccccct cggaatcgga gcaGGGAgga tgGGGAgtgt gaggggtatc cttgatgctt
 421 gtgtgtcccc aactttccaa atccccgccc ccgcgatgga gaagaaaccg agacagaagg
 481 tgcagggccc actaccgctt cctccagatg agctcatggg tttctccacc aaggaagttt
 541 tccgctggtt gaatgattct ttccccgccc tcctctcgcc ccaGGGAcat ataaaggcag
 601 ttgttggcac acccagccag cagacgctcc ctcagcaagg acagcagagg accagctaag
 661 aGGGAgagaa gcaactacag accccccctg aaaacaaccc tcagacgcca catcccctga
 721 caagctgcca ggcaggttct cttcctctca catactgacc cacggcttca ccctctctcc
 781 cctggaaagg acaccatgag cactgaaagc atgatccGGG Acgtggagct ggccgaggag
 841 gcgctcccca agaagacagg ggggccccag ggctccaggc ggtgcttgtt cctcagcctc
 901 ttctccttcc tgatcgtggc aggcgccacc acgctcttct gcctgctgca ctttggagtg
 961 atcggccccc agaGGGAaga ggtgagtgcc tggccagcct tcatccactc tcccacccaa
1021 gGGGAaatga gagacgcaag agaGGGAgag agatGGGAtg ggtgaaagat gtgcgctgat
1081 aGGGAGGGAt gagagagaaa aaaacatgga gaaagacgGG GAtgcagaaa gagatgtggc
1141 aagagatgGG GAagagagag agagaaagat ggagagacag gatgtctggc acatggaagg
1201 tgctcactaa gtgtgtatgg agtgaatgaa tgaatgaatg aatgaacaag cagatatata
1261 aataagatat ggagacagat gtggggtgtg agaagagaga tggGGGAaga aacaagtgat
1321 atgaataaag atggtgagac agaaagagcG GGAaatatga cagctaagga gagagatggg
1381 ggagataagg agagaagaag atagggtgtc tggcacacag aagacactca GGGAaagagc
1441 tgttgaatgc tggaaggtga atacacagat gaatggagag agaaaaccag acacctcagg
1501 gctaagagcg caggccagac aggcagccag ctgttcctcc tttaagggtg actccctcga
1561 tgttaaccat tctccttctc cccaacagtt ccccaGGGAc ctctctctaa tcagccctct
```

Fig. 4A

```
1621 ggcccaggca gtcagtaagt gtctccaaac ctctttccta attctgggtt tgggtttggg
1681 ggtagggtta gtaccggtat ggaagcagtg gGGGAaattt aaagtttgg tcttggGGGA
1741 ggatggatgg aggtgaaagt agggggtat tttctaggaa gtttaagggt ctcagctttt
1801 tcttttctct ctcctcttca ggatcatctt ctcgaacccc gagtgacaag cctgtagccc
1861 atgttgtagg taagagctct gaggatgtgt cttggaactt ggagggctag gatttgGGGA
1921 ttgaagcccg gctgatggta ggcagaactt ggagacaatg tgagaaggac tcgctgagct
1981 caaGGGAagg gtggaggaac agcacaggcc ttagtGGGAt actcagaacg tcatggccag
2041 gtGGGAtgtG GGAtgacaga cagagaggac aggaaccgga tgtggggtgg gcagagctcg
2101 agggccagga tgtggagagt gaaccgacat ggccacactg actctcctct ccctctctcc
2161 ctccctccag caaaccctca agctgagggg cagctccagt ggctgaaccg ccgggccaat
2221 gccctcctgg ccaatggcgt ggagctgaga gataaccagc tggtggtgcc atcagagggc
2281 ctgtacctca tctactccca ggtcctcttc aagggccaag gctgcccctc cacccatgtg
2341 ctcctcaccc acaccatcag ccgcatcgcc gtctcctacc agaccaaggt caacctcctc
2401 tctgccatca agagcccctg ccagaGGGAg accccagagg gggctgaggc caagccctgg
2461 tatgagccca tctatctGGG Aggggtcttc cagctggaga agggtgaccg actcagcgct
2521 gagatcaatc ggcccgacta tctcgacttt gccgagtctg ggcaggtcta ctttGGGAtc
2581 attgccctgt gaggaggacg aacatccaac cttcccaaac gcctcccctg ccccaatccc
2641 tttattaccc cctccttcag acaccctcaa cctcttctgg ctcaaaaaga gaattggggg
2701 cttagggtcg gaacccaagc ttagaacttt aagcaacaag accaccactt cgaaacctgg
2761 gattcaggaa tgtgtggcct gcacagtgaa gtgctggcaa ccactaagaa ttcaaactgg
2821 ggcctccaga actcactggg gcctacagct ttgatccctg acatctggaa tctggagacc
2881 aGGGAgcctt tggttctggc cagaatgctg caggacttga gaagacctca cctagaaatt
2941 gacacaagtg gaccttaggc cttcctctct ccagatgttt ccagacttcc ttgagacacg
3001 gagcccagcc ctccccatgg agccagctcc ctctatttat gtttgcactt gtgattattt
3061 attatttatt tattatttat ttatttacag atgaatgtat ttatttGGGA gaccggggta
3121 tcctggGGGA cccaatgtag gagctgcctt ggctcagaca tgttttccgt gaaaacggag
3181 ctgaacaata ggctgttccc atgtagcccc ctggcctctg tgccttcttt tgattatgtt
```

Fig. 4B

```
3241 ttttaaaata tttatctgat taagttgtct aaacaatgct gatttggtga ccaactgtca
3301 ctcattgctg agcctctgct ccccagGGGA gttgtgtctg taatcgccct actattcagt
3361 ggcgagaaat aaagtttgct tagaaaagaa acatggtctc cttcttggaa ttaattctgc
3421 atctgcctct tcttgtgggt GGGAagaagc tccctaagtc ctctctccac aggctttaag
3481 atccctcgga cccagtccca tccttagact cctagggccc tggagaccct acataaacaa
3541 agcccaacag aatattcccc atcccccagg aaacaagagc ctgaacctaa ttacctctcc
3601 ctcagggcat GGGAatttcc aactctGGGA attc
```

Fig. 4C

Fig. 5A

ALDH

Fig. 5B

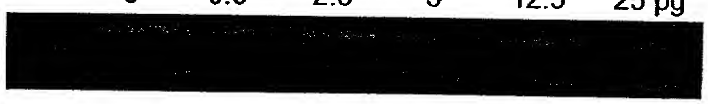
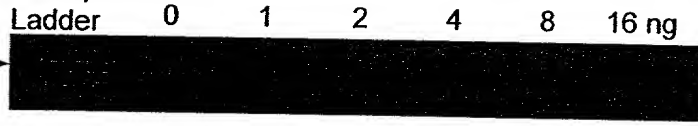


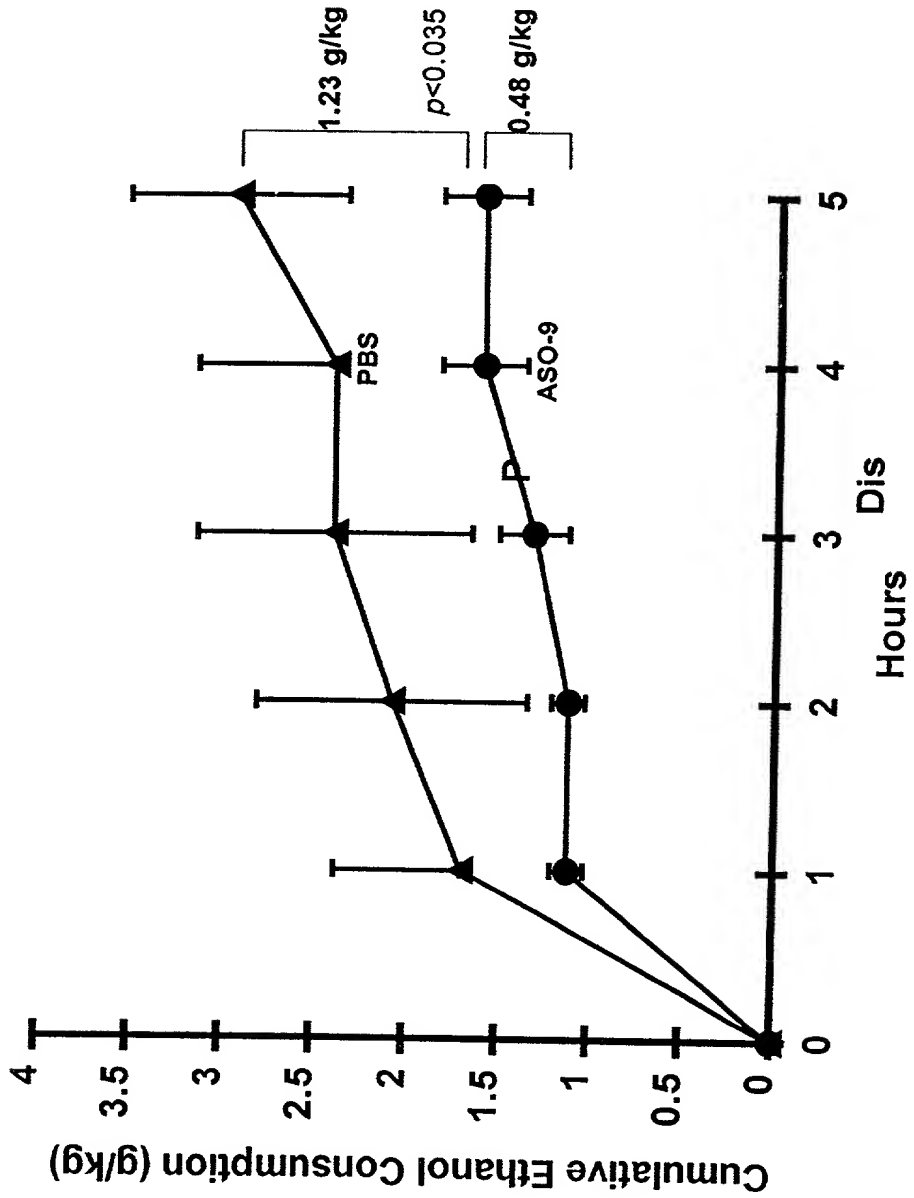
Fig. 5C



GDH

Fig. 5D

FIGURE 6



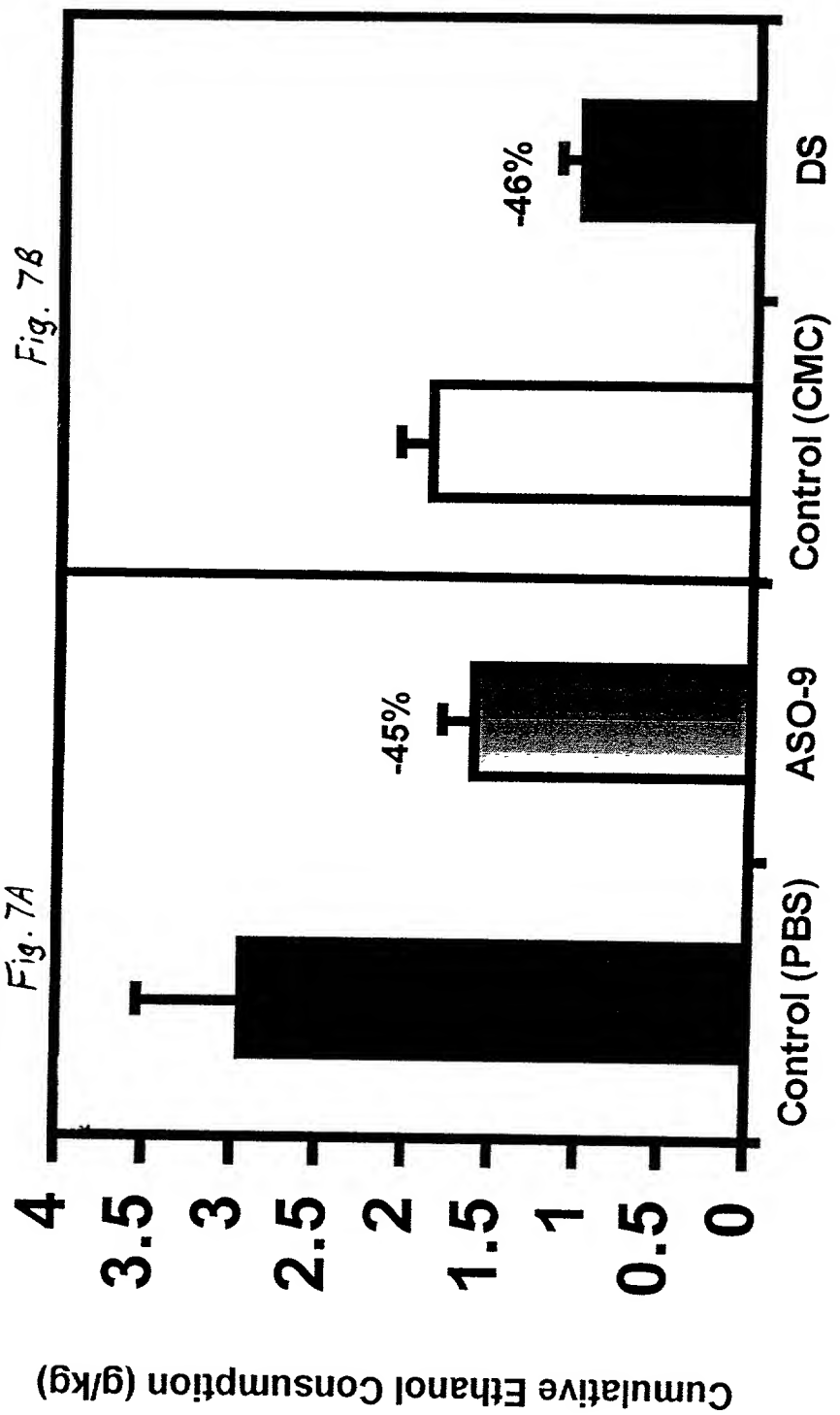


Fig. 7A
Fig. 7B
Cumulative Ethanol Consumption (g/kg)
4
3.5
3
2.5
2
1.5
1
0.5
0
Control (PBS)
ASO-9
Control (CMC)
DS
-45%
-46%

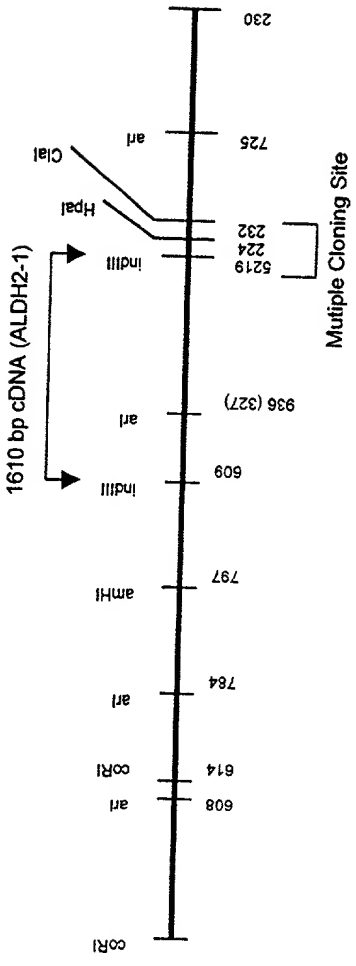

230
725
an
ClaI
HpaI
232
224
5219
Mutiple Cloning Site
IndIII
936 (327)
an
609
IndIII
797
amHI
764
an
614
coRI
608
an
coRI
1610 bp cDNA (ALDH2-1)

Fig. 8A

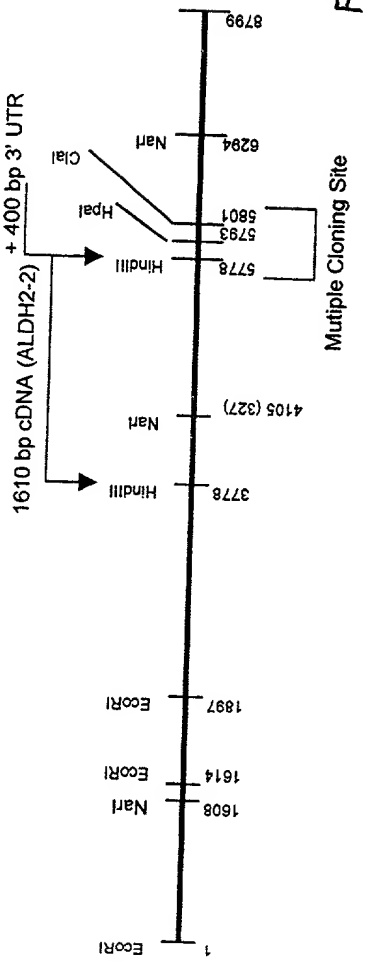

8799
6284
NarI
ClaI
HpaI
5801
5793
5778
HindIII
Mutiple Cloning Site
4105 (327)
NarI
3778
HindIII
1897
EcoRI
1614
EcoRI
1608
NarI
1
EcoRI
+ 400 bp 3' UTR
1610 bp cDNA (ALDH2-2)

Fig. 8B

FIGURE 9

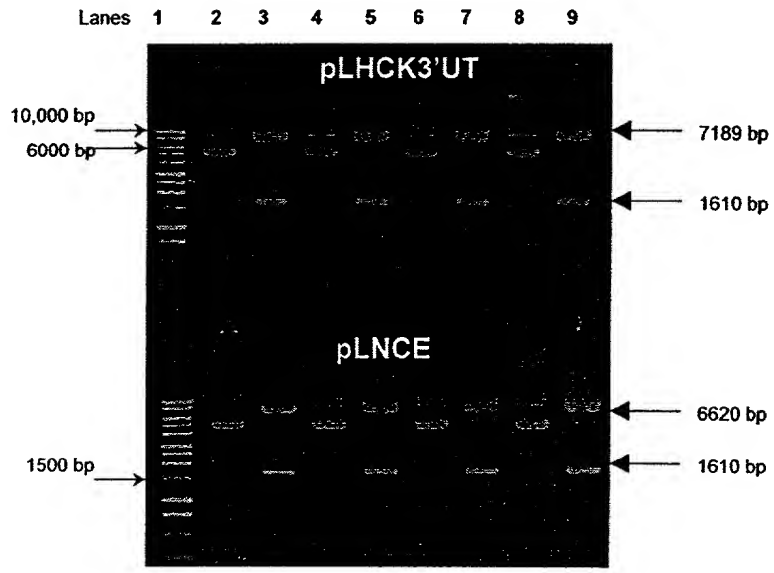
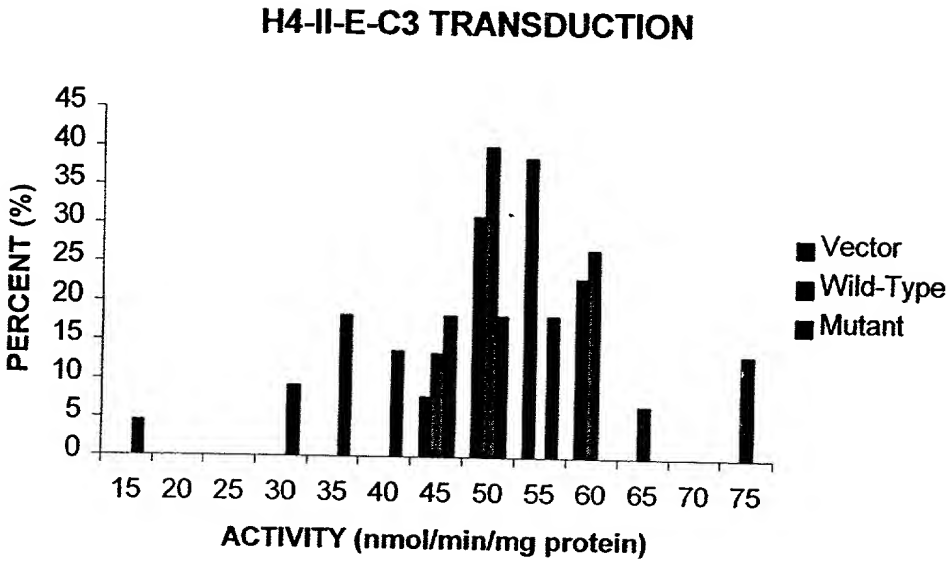

Lanes 1 2 3 4 5 6 7 8 9
pLHCK3'UT
10,000 bp
6000 bp
7189 bp
1610 bp
pLNCE
6620 bp
1500 bp
1610 bp

FIGURE 10


H4-II-E-C3 TRANSDUCTION
PERCENT (%)
45
40
35
30
25
20
15
10
5
0
15 20 25 30 35 40 45 50 55 60 65 70 75
ACTIVITY (nmol/min/mg protein)
Vector
Wild-Type
Mutant

GCTTTATCTG CTAAGCTCCG CTCAGTTCAG CATGCTGCGC
GCCGCACTCA GCACCGCCCG CCGTGGGCCA CGCCTGAGCC
GCCTGCTGTC CGCCGCCGCC ACCAGCGCGG TGCCAGCCCC
CAACCAGCAG CCCGAGGTCT TCTGCAACCA GATCTTCATT
AACAATGAGT GGCATGATGC TGTCAGCAAG AAAACATTCC
CCACCGTCAA CCCTTCCACG GGGGAGGTCA TCTGCCAGGT
AGCCGAAGGG AACAAGGAGG ACGTAGACAA GGCAGTGAAG
GCCGCTCAGG CAGCCTTCCA GCTGGGCTCG CCCTGGCGCC
GCATGGATGC ATCTGACAGG GGCCGGCTGT TGTACCGATT
GGCTGATCTC ATCGAACGGG ACCGGACCTA CCTGGCGGCC
TTGGAGACCC TGGACAACGG CAAGCCTTAT GTCATCTCCT
ACCTGGTGGA TTTGGACATG GTTCTGAAAT GTCTCCGCTA
TTATGCTGGC TGGGCTGACA AGTACCACGG GAAAACCATT
CCCATCGATG GCGACTTCTT CAGCTACACC CGCCACGAGC
CTGTGGGCGT GTGTGGACAG ATCATTCCGT GGAACTTCCC
GCTCCTGATG CAAGCCTGGA AGCTGGGCCC TGCCTTGGCA
ACTGGAAACG TGGTGGTGAT GAAAGTGGCC GAGCAGACAC
CGCTCACTGC ACTCTACGTG GCCAACTTGA TCAAGGAGGC
AGGCTTCCCC CCTGGTGTGG TCAATATTGT TCCTGGATTC
GGCCCTACCG CCGGGGCTGC CATCGCGTCC CACGAGGATG
TGGACAAAGT GGCCTTCACA GGTTCCACTG AGGTTGGTCA
CCTAATCCAG GTTGCCGCCG GGAGCAGCAA TCTCAAGAGA
GTAACCCTGG AACTGGGGGG AAAGAGCCCC AATATCATCA
TGTCAGACGC TGACATGGAC TGGGCTGTGG AACAGGCCCA
CTTTGCCCTG TTCTTCAACC AGGGCCAGTG CTGTTGTGCG
GGCTCCCGGA CCTTCGTGCA GGAGGATGTG TATGATGAAT
TCGTGGAACG CAGTGTGGCC CGGGCCAAGT CTCGGGTGGT
CGGGAACCCT TTCGACAGCC GGACGGAGCA GGGGCCGCAG
GTGGATGAGA CTCAGTTTAA GAAGATCCTG GGCTATATCA
AGTCAGGACA ACAAGAAGGG GCGAAGCTGC TGTGCGGTGG
GGGCGCCGCC GCAGACCGTG GTTACTTCAT CCAGCCCACC
GTGTTCGGAG ACGTCAAAGA TGGCATGACC ATCGCCAAGG
AGGAGATCTT CGGACCAGTG ATGCAGATCC TCAAATTCAA
GACCATTGAG GAGGTTGTGG GGCGAGCCAA TAATTCCAAG
TACGGGCTGG CTGCCGCTGT CTTCACAAAG GACCTGGACA
AGGCCAATTA CCTGTCCCAA GCTCTGCAGG CTGGGACTGT
GTGGATCAAC TGCTACGATG TGTTTGGGGC CCAGTCCCCA
TTTGGTGGCT ATAAGATGTC GGGGAGCGGC AGGGAGCTGG
GCGAGTATGG CCTGCAGGCC TACACGGAAG TGAAGACGGT
CACCGTCAAA GTGCCACAGA AGAACTCGTA AAGTGGCGTG

Fig. 11A

```
CAGGCTTCCT CAGCCAGCGC CCAAAAACCC AACAAGATCC
TGAGAAAAGC CACCACCAAG CACACTGCGC CTGCCAAGAG
AAAACCCCTT CACCAAAGCG TCTTGGGCCA AGAAAGTCAG
GATTTGATAA ACAGGGCAGG GTTGGTGGGC GGTGTGTGGG
GAGCATCCCA GTAAACTGGG GAAGGGAGGA GCTCTGTGCA
GACTACCACG CGCACGCACA CACGCTCACT GGGTCCTTCT
GTGCTGGATG CTGGTTCCAC CCTCAGTGCT TAAACAAATG
AGCAATAAA
```

Fig. 11B

GCTCTCGGTC CGCTCGCTGT CCGCTAGCCC GCTGCGATGT
TGCGCGCTGC CGCCGCTCGG GCCCCGCCTG GCCGCCGCCT
CTTGTCAGCC GCCGCCACCC AGGCCGTGCC TGCCCCCAAC
CAGCAGCCCG AGGTCTTCTG CAACCAGATT TTCATAAACA
ATGAATGGCA CGATGCCGTC AGCAGGAAAA CATTCCCCAC
CGTCAATCCG TCCACTGGAG AGGTCATCTG TCAGGTAGCT
GAAGGGGACA AGGAAGATGT GGACAAGGCA CGTGAAGGCC
GCCCGGGCGC CTTCCAGCTG GGCTCACCTT GGCGCCGCAT
GGACGCATCA CACAGCGGCC GGCTGCTGAA CCGCCTGGCC
GATCTGATCG AGCGGGACCG GACCTACCTG GCGGCCTTGG
AGACCCTGGA CAATGGCAAG CCCTATGTCA TCTCCTACCT
GGTGGATTTG GACATGGTCC TCAAATGTCT CCGGTATTAT
GCCGGCTGGG CTGATAAGTA CCACGGGAAA ACCATCCCCA
TTGACGGAGA CTTCTTCAGC TACACACGCC ATGAACCTGT
GGGGGTGTGC GGGCAGATCA TTCCGTGGAA TTTCCCGCTC
CTGATGCAAG CATGGAAGCT GGGCCCAGCC TTGGCAACTG
GAAACGTGGT TGTGATGAAG GTAGCTGAGC AGACACCCCT
CACCGCCCTC TATGTGGCCA ACCTGATCAA GGAGGCTGGC
TTTCCCCCTG GTGTGGTCAA CATTGTGCCT GGATTTGGCC
CCACGGCTGG GGCCGCCATT GCCTCCCATG AGGATGTGGA
CAAAGTGGCA TTCACAGGCT CCACTGAGAT TGGCCGCGTA
ATCCAGGTTG CTGCTGGGAG CAGCAACCTC AAGAGAGTGA
CCTTGGAGCT GGGGGGGAAG AGCCCCAACA TCATCATGTC
AGATGCCGAT ATGGATTGGG CCGTGGAACA GGCCCACTTC
GCCCTGTTCT TCAACCAGGG CCAGTGCTGC TGTGCCGGCT
CCCGGACCTT CGTGCAGGAG GACATCTATG ATGAGTTTGT
GGTGCGGAGC GTTGCCCGGG CCAAGTCTCG GGTGGTCGGG
AACCCCTTTG ATAGCAAGAC CGAGCAGGGG CCGCAGGTGG
ATGAAACTCA GTTTAAGAAG ATCCTCGGCT ACATCAACAC
GGGGAAGCAA GAGGGGGCGA AGCTGCTGTG TGGTGGGGGC
ATTGCTGCTG ACCGTGGTTA CTTCATCCAG CCCACTGTGT
TTGGAGATGT GCAGGATGGC ATGACCATCG CCAAGGAGGA
GATCTTCGGG CCAGTGATGC AGATCCTGAA GTTCAAGACC
ATAGAGGAGG TTGTTGGGAG AGCCAACAAT TCCACGTACG
GGCTGGCCGC AGCTGTCTTC ACAAAGGATT TGGACAAGGC
CAATTACCTG TCCCAGGCCC TCCAGGCGGG CACTGTGTGG
GTCAACTGCT ATGATGTGTT TGGAGCCCAG TCACCCTTTG
GTGGCTACAA GATGTCGGGG AGTGGCCGGG AGTTGGGCGA
GTACGGGCTG CAGGCATACA CTGAAGTGAA AACTGTCACA
GTCAAAGTGC CTCAGAAGAA CTCATAAGAA TCATGCAAGC

Fig. 12A

TTCCTCCCTC AGCCATTGAT GGAAAGTTCA GCAAGATCAG
CAACAAAACC AAGAAAAATG ATCCTTGCGT GCTGAATATC
TGAAAAGAGA AATTTTTCCT ACAAAATCTC TTGGGTCAAG
AAAGTTCTAG AATTTGAATT GATAAACATG GTGGGTTGGC
TGAGGGTAAG AGTATATGAG GAACCTTTTA AACGACAACA
ATACTGCTAG CTTTCAGGAT GATTTTTAAA AAATAGATTC
AAATGTGTTA TCCTCTCTCT GAAACGCTTC CTATAACTCG
AGTTTATAGG GGAAGAAAAA GCTATTGTTT ACAATTATAT
CACCATTAAG GCAACTGCTA CACCCTGCTT TGTATTCTGG
GCTAAGATTC ATTAAAAACT AGCTGCTCT

Fig. 12B